

Noncompetitive immunochemical determination of ribonuclease using transition metal ions and the effect of catalytic hydrogen release | Nekonkurentnoe immunokhimicheskoe opredelenie ribonukleazy s ispol'zovaniem ionov perekhodnykh metallov i éffekta kataliticheskogo vydeleniia vodoroda.

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Abstract

A noncompetitive variant of immunochemical ribonuclease (RNase) determination has been developed, involving the use of Co(II) as a label. A variety of approaches to labeling the immunological reagent with the metal have been assessed. In the variant proposed, catalytic hydrogen release was used as a means of detecting the label, the amount of which was proportional to RNase concentration. Conditions making it possible to record catalytic hydrogen release fluxes were determined. In the presence of RNase, the electrocatalytic effect was maximum at a concentration of Co(II) in the ammoniac buffer, equal to 2×10^{-4} M (pH 10.0). The dependence was linear in the range 4-2000 ng/ml RNase concentrations (threshold concentration, 2 ng/ml).
